ORGANIC DATA VALIDATION REPORT

To: U.S. EPA Region 6
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Project/Site: EPA Region 6 – Hurricane Harvey Emergency Response
Site: Arkema
Laboratory Report: C17I001

This report presents the organic data validation for the samples collected during the field activities for the above referenced work assignment. The purpose of this review is to provide a Stage 2A validation of the following surface water samples collected on September 1, 2017 and analyzed by the Portable High-Throughput Integrated Laboratory Identification System (PHILIS):

Field Sample Numbers	Laboratory ID	Analyses/Methods
HH01-01-01-170901-21	C17I001-01	VOCs by EPA 8260C SVOCs by EPA 8270D
HH01-01-02-170901-21	C17I001-02	
HH01-01-03-170901-21	C17I001-03	
HH01-01-03-170901-22	C17I001-04	
HH01-01-04-170901-21	C17I001-05	
HH01-01-05-170901-21	C17I001-06	

The limited data validation was conducted for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) in accordance with the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Review, January 2017 for the data elements that are included in a Stage 2A data review.

Stage 2A validation was performed on the sample results. The data were evaluated based on the following parameters:

*	Data Completeness
	Holding Times, Sample Preservation and Receipt
*	Laboratory Method Blanks
NA	Field Blanks
*	Matrix Spike/Matrix Spike Duplicates
*	Laboratory Control Samples (Blank Spikes)
	Surrogate Recoveries
*	Field Duplicates
*	Sample Dilutions and Detection Limits

*	**All criteria were met for this parameter**
NA	**Not applicable**

Data Completeness

The Level 2 data package was complete and included a case narrative; sample results; batch QC results consisting of method blank, laboratory control sample (LCS), and matrix spike (MS) and matrix spike duplicate (MSD); and Chain-of-Custody forms. The case narrative and/or COC noted sample receiving temperatures and, if any, issues with sample receipt. Raw data is not included in a Level 2 data package.

Holding Times, Sample Preservation and Receipt

All surface water samples were analyzed within holding time.

All samples were received above the recommended ≤6°C QC limit. The cooler receipt temperatures were 11.5°C and 10°C, respectively. All non-detected sample results were qualified as estimated (UJ) based on the temperature at receipt.

Samples were hand delivered to the mobile laboratory the day after they were sampled. One sample receiving problem was noted:

- One VOA vial for sample HH01-01-03-170901-21 was received with a broken cap. No data qualifiers were applied because the reported sample results were obtained from an intact VOA vial.

Laboratory Method Blanks

The method blanks (MB) were analyzed at the required frequency. No contaminants were found in these blanks.

Field Blanks

No field blanks were submitted with these samples.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate (MS/MSD) analyses were performed using sample HH01-01-05-170901-21. Matrix spike recoveries were within the laboratory's QC acceptance limits. The laboratory noted that the Relative Percent Difference (RPD) between the MS and MSD exceeded the laboratory's QC limits for 17 SVOC compounds:

- Phenol (35.5%), bis(2-chloroethyl)ether (46%), 2-chlorophenol (44.8%), 2-methylphenol (38.5%), bis(2-chloroisopropyl)ether (44.7%), N-nitroso-di-n-propylamine (41.8%), hexachloroethane (60.3%), nitrobenzene (47.7%), isophorone (33.2%), 2-nitrophenol (43.8%), 2,4-dimethylphenol (37%), bis(2-

chloroethoxy)methane (41.2%), 2,4-dichlorophenol (39%), naphthalene (44.2%), hexachlorobutadiene (62.1%), 2-methylnaphthalene (36.1%), and hexachlorocyclopentadiene (52.6%). Non-detected sample results were not qualified based on the elevated RPDs between the MS and MSD.

Laboratory Control Samples (Blank Spikes)

One LCS was analyzed per QC batch. All LCS analyte recoveries were within the laboratory's QC acceptance limits. No data validation qualifiers were required.

Surrogate Recoveries

Each field and QC sample was spiked with surrogates. All VOC surrogate percent recoveries (%Rs) were within the laboratory's QC acceptance limits.

The mobile laboratory's lower control limits for five of six SVOC surrogates are less than 10%R. However, the NFG specifies that if surrogate recoveries fall below 10 %R, non-detected results should be rejected (R) and detected results should be estimated with a low bias (J-). The data validator followed NFG guidance if the SVOC recovery was less than 10%R. Furthermore, the data validator used professional judgment to qualify SVOC sample results only if two or more surrogates in the same analytical class [acids (i.e., the phenol compounds) or the remaining base/neutral (B/N) compounds] failed the acceptance limits.

SVOC surrogates were within the laboratory's QC acceptance limits and exceeded 10%R except for the following SVOC sample:

- Two of three acid surrogates and one of three B/N surrogates in sample HH01-01-03-170901-21 recovered at less than the 10%R specified in the NFG: 2-fluorophenol (7.66%R), phenol-d6 (5.98%R), and nitrobenzene-d5 (9.25%R). Non-detected results for acid compounds (i.e., phenol and substituted phenols) were rejected in sample HH01-01-03-170901-21. The B/N SVOC results were not adversely qualified in this sample because two of the three B/N surrogate recoveries were within laboratory QC acceptance limits and exceeded 10%R.

The data user should note that the surrogate recoveries in the field duplicate of sample HH01-01-03-170901-21 were within QC acceptance limits and exceeded 10%R. Therefore, the data user should use the sample results for HH01-01-03-170901-22 for this sampling location.

Field Duplicates

Field duplicate samples HH01-01-03-170901-21 and HH01-01-03-170901-22 were analyzed. No VOC or SVOC target analytes were detected above the Reporting Limit (RL) in these two samples, therefore, field duplicate precision criteria were met.

Sample Dilutions and Detection Limits

The mobile laboratory reported detections only if the results were equal to or greater than the RL. Detected results less than the RL and above the Method Detection Limit (MDL) were not reported.

No sample dilutions were required for these samples. Sample dilution elevates the RLs and may cause the results to exceed an action limit.

DATA QUALIFIER DEFINITIONS

For the purpose of Data Validation, the following validation qualifiers and associated definitions are provided for use by the data validator to summarize the data quality.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ The result is an estimated quantity, but the result may be biased high.

J- The result is an estimated quantity, but the result may be biased low.

UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

R Reported value is "rejected." The sample results are rejected due to serious deficiencies in meeting QC criteria. The data are unusable. The analyte may or may not be present in the sample.